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(FILE 'HOME' ENTERED AT 11:35:20 ON 14 FEB 2002)
FILE 'CA' ENTERED AT 11:35:30 ON 14 FEB 2002
L1 76069 S (INTERFER? OR IMPURI? OR ERROR OR OVERLAP?) (6A) (REDUC? OR ELIMINAT?
OR ELLIMINAT? OR COMPENSAT? OR CORRECT? OR CALIBRAT? OR REMOV?)
L2 2579 S DERIVATIVE AND L1
L3 3603 S L1 AND(EQUATION OR REGRESS? OR ALGORITHM?)
L4 162 S L2 AND L3
L5 39419 S (INTERFER? OR IMPURI? OR ERROR OR OVERLAP?) (6A) (SPECTR? OR ABSORB?)
L6 489 S L2-3 AND L5
L7 6301 S (INTERFER? OR IMPURI? OR ERROR OR OVERLAP?) (6A) (BLOOD OR HB OR
HEMOGLOBIN)
L8 47 S L2 AND L7
L9 3838 S BLOOD(3A)SUBSTITUTE
L10 16 S L1 AND L9
L11 547 S L4,L6,L8,L10 NOT PY>1997
L12 115 S L11 AND DERIVAT?(4A) (SPECTR? OR PHOTOSPECTR? OR PHOTOMET?)
L13 432 S L11 NOT L12
L14 422 S L13 NOT(NMR OR NUCLEAR MAGNET?)
L15 392 S L14 NOT(MASS SPECTRO? OR SCINTILL?)
L16 39 S L15 AND(MULTIVAR? OR LEAST SQUARES)
FILE 'BIOSIS' ENTERED AT 12:15:00 ON 14 FEB 2002
L17 38 S L12,L16
FILE 'MEDLINE' ENTERED AT 12:16:59 ON 14 FEB 2002
L18 15 S L12,L16
FILE 'CA, BIOSIS, MEDLINE' ENTERED AT 12:18:26 ON 14 FEB 2002
L19 169 DUP REM L12 L16 L17 L18 (38 DUPLICATES REMOVED)

=> d l19 bib,ab 1-169

%L19 ANSWER 8 OF 169 CA COPYRIGHT 2002 ACS
AN 126:334491 CA
TI Simultaneous determination of drugs in concentration ratios above 40:1 by
application of multivariate calibration to absorbance and derivative
spectrophotometric signals
AU Bautista, R. D.; Jimenez, A. I.; Jimenez, F.; Arias, J. J.
CS Faculty Chemistry, University La Laguna, La Laguna, E-38071, Spain
SO Fresenius' J. Anal. Chem. (1997), 357(4), 449-456
AB The performance of 2 multivariate calibration methods, multiple linear
regression (MULTI3) and partial least-square regression (PLS-2), for the
resoln. of the ternary mixts. of acetylsalicylic acid-caffeine-codeine and
acetaminophen-caffeine-codeine is compared. The methodologies were checked
by applying them to the anal. of 2 sets of lab.-prepd. mixts. over the
concn. ranges 13.0-19.0, 1.00-3.00, and 0.20-1.00 .mu.g/mL for
acetylsalicylic acid-caffeine-codeine and 12.0-22.0, 0.40-2.00, and
0.20-1.00 .mu.g/mL for acetaminophen-caffeine-codeine, resp. While the
results provided by MULTI3 were unacceptable in the majority of the cases,
those obtained by PLS-2 were quite good with considerably diminished
errors, as a result of calibration and/or checking with MULTI3, taking no
account of potential interactions between analytes. It is possible by
using PLS-2 to resolve complex mixts. of analytes in a highly disparate
proportion, even when they have overlapping signals. The proposed method
was successfully demonstrated for pharmaceutical tablets.

L19 ANSWER 16 OF 169 CA COPYRIGHT 2002 ACS
AN 126:54195 CA
TI Surfactant extraction and determination of ruthenium(III) as a thiocyanato

complex

AU Tagashira, Shoji; Murakami, Yoshiko; Nishiyama, Miyuki; Harada, Nobuko;
Sasaki, Yoshiaki
CS Fac. Sci., Yamaguchi Univ., Yamaguchi, 753, Japan
SO Bull. Chem. Soc. Jpn. (1996), 69(11), 3195-3199
AB Ru(III) was reacted to form a complex with thiocyanate, and extd. into the
surfactant phase with Zephiramine (Z) by heating. The structure of this
ion-pair is $[RuX_2(SCN)_2] \cdot cntdot Z^+$, in which X was a chloride ion, and was
obsd. to cause an increasing absorbance and a blue shift of the spectrum.
The detn. of Ru(III) was studied by the surfactant extn.-spectrophotometric
method using a nonionic surfactant of Triton X-100 as an extn. solvent.
The molar absorptivity was equal to $1.16 \times 10^4 \text{ dm}^3 \text{ cm}^{-1} \text{ mol}^{-1}$ at 565
nm. Ru(III) could be concd. from the soln. into a surfactant phase having
a small vol. The 1st-order deriv. spectroscopic method was used to reduce
the interference from other Pt-group elements, such as Os.

L19 ANSWER 18 OF 169 CA COPYRIGHT 2002 ACS

AN 125:346337 CA

TI Derivative spectrophotometric determination of nickel using Br-PADAP
AU Ferreira, Sergio L. C.; Spinola Costa, A. C.; de Jesus, Djane S.
CS Instituto Quimica, Universidade Federal Bahia, Salvador, 40170-290, Brazil
SO Talanta (1996), 43(10), 1649-1656

AB A major problem with spectrophotometric methods for nickel is cobalt
interference, because many of the reagents for nickel also react with
cobalt. The interference of cobalt in the detn. of nickel using
2-(5-bromo-2-pyridylazo)-5-diethylaminophenol (Br-PADAP) was eliminated
using deriv. spectrophotometry, using the zero-crossing method for
evaluation of the deriv. signal. BR-PADAP reacts with nickel(II) in the
presence of Triton X-100 to form a red complex with absorption maxima at
530 and 562 nm. The reactions parameters and the conditions for the
measurements of the 1st- deriv. signal were studied and using the deriv.
technique, Br-PADAP can be used for nickel detn. with a selectivity higher
than that of ordinary spectrophotometry and with a limit of detection of
 0.2 ng ml^{-1} . The pH should be in the range 5.0-6.0 using an acetate
buffer. The detn. of nickel in the presence of cobalt was performed with
conventional and deriv. procedures, and only the deriv. method should be
used and, of the methods used for evaluation of the deriv. signal, the
zero-crossing method is the best. The proposed procedure was used for
nickel detn. in steels stds. The procedure has satisfactory accuracy and
precision. Cobalt interference can be also eliminated by using
dual-wave-length spectroscopy.

%L19 ANSWER 23 OF 169 CA COPYRIGHT 2002 ACS

AN 124:277104 CA

TI Derivative spectrophotometry in the determination of metal ions with
4-(pyridyl-2-azo)resorcinol (PAR)

AU Bobrowska-Grzesik, Ewa; Grossman, Andrzej M.
CS Dep. Analytical Gen. Chem., Silesian Tech. Univ., Gliwice, PL-44 100, Pol.
SO Fresenius' J. Anal. Chem. (1996), 354(4), 498-502

AB Deriv. spectrophotometry was applied for the elimination of the mutual
spectral interferences and the anal. of binary, ternary and quaternary
mixts. of complexes of microgram amts. of divalent ions of Co, Cu, lead,
Mn, Ni, Zn and Fe with 4-(pyridyl-2-azo)resorcinol (PAR) at $0.05\text{-}1 \text{ .}\mu\text{g/mL}$
($0.2\text{-}4 \text{ .}\mu\text{g/mL}$ for lead). The 1st deriv. spectra can be used for the
detn. of both components in the majority of binary mixts. except of Cu(II)
and Co(II) and systems contg. Fe(II). The 2nd and the 3rd deriv. spectra
allow to det. one constituent in some ternary and quaternary mixts.

%L19 ANSWER 27 OF 169 CA COPYRIGHT 2002 ACS

AN 125:315511 CA

TI Interference assessment and correction in the partial least squares regression method for multicomponent determination by UV spectrophotometry

AU Zhang, Peixun; Littlejohn, David

CS Department of Pure and Applied Chemistry, University of Strathclyde, Thomas Graham Building, 295 Cathedral Street, Glasgow, G1 1XL, UK

SO Chemom. Intell. Lab. Syst. (1996), 34(2), 203-215

AB Improvements have been made to the traditional partial least squares (PLS) regression and cross-validation procedures. The new PLS procedure copes more effectively with non-analyte interference in multicomponent detns. and provides an est. of the interference spectrum. The interference spectrum can be used to partially or quant. correct the measured spectrum before detn. of analyte concns. Hence the accuracy of anal. is improved. The modified cross-validation procedure reduces computer time by a factor of three, for the assessment of the no. of principal components, compared with the conventional method.

%L19 ANSWER 41 OF 169 CA COPYRIGHT 2002 ACS

AN 122:170329 CA

TI Simultaneous spectrophotometric determination of fat-soluble vitamins in multivitamin pharmaceutical preparations

AU Blanco, M.; Coello, J.; Iturriaga, H.; MasPOCH, S.; Gomez-Cotin, T.; Alaoui-Ismaili, S.; Rovira, E.

CS Dep. Qumica, Univ. Autonoma de Barcelona, Bellaterra, E-08193, Spain

SO Fresenius' J. Anal. Chem. (1995), 351(2-3), 315-19

AB A spectrophotometric method is proposed for the simultaneous detn. of vitamins A, D and E in multivitamin pharmaceutical preps. This is based on multiple linear regression. Most vitamins are directly extd. from the preps. into n-hexane. Microencapsulated vitamin A preps. require pretreatment of de-encapsulation before the vitamin is extd. The wavelength range to be used for each prepn. and the optimum spectral mode (absorbance or first-deriv.) has been chosen in order to assure correct quantitation and avoid interferences from other absorbing species also extd. by n-hexane. The results obtained were validated by simultaneous HPLC analyses for accuracy and precision.

L19 ANSWER 46 OF 169 CA COPYRIGHT 2002 ACS

AN 123:265554 CA

TI Selection of calibration mixtures and wavelengths for different multivariate calibration methods

AU Navarro-Villoslada, F.; Perez-Arribas, L. V.; Leon-Gonzalez, M. E.; Polo-Diez, L. M.

CS Departamento de Quimica Analitica, Facultad de Ciencias Quimicas, Universidad Complutense, 28040, Madrid, Spain

SO Anal. Chim. Acta (1995), 313(1-2), 93-101

AB A comparative study to select calibration mixts. and wavelengths in multivariate calibration methods was made. The methods studied were classical least squares (CLS), inverse least squares (ILS), partial least squares (PLS), principal component regression (PCR) and Kalman filter. For each method, the calibration samples were selected from a total random population of 37 calibration stds., taking into account the std. error of prediction (SEP). The selection of anal. wavelengths for each method was carried out using different criteria: the condition no. for CLS and Kalman filter methods, the signal-to-noise (S/N) ratio and the condition no. for ILS method, and all the previous criteria and the full spectrum for PCR and PLS methods. The best results were obtained using the condition no. as criterion to select the anal. wavelengths. The study has been applied to

the spectrophotometric detn. of four priority pollutant chlorophenols in water samples.

%L19 ANSWER 47 OF 169 CA COPYRIGHT 2002 ACS

AN 124:31847 CA

TI Quantitative determination of dyes on the fibers with coefficient multiple derivative UV-VIS spectrophotometry

AU Shi, Xiaofan; Wang, Jinghan; Qi, Baokun

CS 3rd Dep., Criminal Plice Coll. China, Shenyang, 110035, Peop. Rep. China

SO Fenxi Ceshi Xuebao (1995), 14(2), 58-61

AB The detn. of Disperse Yellow RGFL, Disperse Brown 2RL and Disperse Red S-BWFL on colored Dacron fibers by coeff. multiple deriv. spectrophotometry is described. Overlapping of the absorption peaks of the three dyes is serious. The mutual interference can be completely eliminated by this method without preliminary sepn. The detd. ratio of the dye concns. agreed well with the ratio in the formulation. The method is accurate, reliable, simple, fast and applicable to the detn. of the dyes on fibers.

L19 ANSWER 52 OF 169 CA COPYRIGHT 2002 ACS

AN 121:156049 CA

TI Rapid, Sensitive, and Specific Thiobarbituric Acid Method for Measuring Lipid Peroxidation in Animal Tissue, Food, and Feedstuff Samples

AU Botsoglou, Nickos A.; Fletouris, Dimitrios J.; Papageorgiou, Georgios E.; Vassilopoulos, Vassilios N.; Mantis, Antonios J.; Trakatellis, Antonios G.

CS School of Veterinary Medicine, Aristotle University, Thessaloniki, 54006, Greece

SO J. Agric. Food Chem. (1994), 42(9), 1931-7

AB A rapid aq. acid extn. thiobarbituric acid method for measuring malondialdehyde as a marker of lipid peroxidn. in animal tissue, food, and feed samples has been developed. The sample is homogenized with aq. trichloroacetic acid in the presence of hexane and butylated hydroxytoluene, and the homogenate is centrifuged. Following reaction with thiobarbituric acid reagent, malondialdehyde is directly quantified on the basis of the third-deriv. absorption spectrum of the pink complex formed. Further purifn. is not required because the deriv. transformation of the conventional anal. band at around 532nm virtually eliminates spectral interferences arising from other compds. The effect of antioxidants and the optimum conditions for the reaction have been established, and the anal. performance of the new method has been evaluated. The applicability of the method on various animal tissue, food, and feed samples has been also tested. Owing to its simplicity and increased sensitivity and specificity, the method may be preferred over other methods for estg. the extent of lipid peroxidn.

L19 ANSWER 65 OF 169 CA COPYRIGHT 2002 ACS

AN 118:76436 CA

TI Determination of malonaldehyde in human plasma: elimination of spectral interferences in the 2-thiobarbituric acid reaction

AU Espinosa-Mansilla, Anunciacion; Salinas, Francisco; Leal, Amparo Rubio

CS Dep. Anal. Chem., Univ. Extremadura, Badajoz, 06071, Spain

SO Analyst (Cambridge, U. K.) (1993), 118(1), 89-95

AB A selective, deriv. spectrophotometric method was developed for the detn. of malonaldehyde (MLD), based on a reaction with 2-thiobarbituric acid (TBA). The proposed method was applied to the detn. of MLD in human plasma. A study to eliminate several spectral interferences is described. A comparative study of the results obtained by using the proposed deriv. method and a conventional TBA method applied to human plasma is presented, and the advantages of the proposed method over the conventional method for

the detn. of MLD in human plasma are evaluated.

%L19 ANSWER 83 OF 169 CA COPYRIGHT 2002 ACS

AN 119:84705 CA

TI Studies on numerical derivative spectrometry in inductively coupled plasma atomic emission spectrometry. I. Compensation of spectral interferences

AU Yang, Jinfu; Piao, Zhexiu; Zeng, Xianjin; Zhang, Zhuoyong; Chen, Xinhai; Guan, Qiudi

CS Changchun Inst. Appl. Chem., Acad. Sin., Changchun, 130022, Peop. Rep. China

SO Guangpuxue Yu Guangpu Fenxi (1992), 12(5), 55-62

AB Numerical deriv. techniques were evaluated exptl. with interferent equiv. concn. as the criterion for compensation of spectral interferences in ICP-AES. Typical spectral inferences are covered, including flat background, sloped background, simple curved background and line overlaps with different overlapping degrees, which were defined as the ratio of the net interfering signal at the anal. wavelength to the peak signal of the interfering line. The results showed that the numerical deriv. techniques work well for all the three types of background interference, and generally, are also effective for line overlaps with an overlapping degree of less than 0.8. Furthermore, the interferent equiv. concns. in the deriv. spectra are decreased by one or two order of magnitudes compared to those in the original spectra.

%L19 ANSWER 88 OF 169 CA COPYRIGHT 2002 ACS

AN 116:227160 CA

TI Determination of trace lanthanum, cerium, samarium, copper, aluminum, and lead in high-purity yttrium oxide with inductively coupled plasma atomic emission spectrometry - numerical derivative techniques for correction of spectral interferences

AU Yang, Jinfu; Paio, Zhexiu; Zeng, Xianjin

CS Changchun Inst. Appl. Chem., Acad. Sin., Changchun, 130022, Peop. Rep. China

SO Anal. Sci. (1991), 7(Suppl., Proc. Int. Congr. Anal. Sci., 1991, Pt. 1), 479-82

AB Numerical deriv. techniques have been studied for the correction of spectral interferences in the detn. of trace impurities in high-purity yttrium oxide with inductively coupled plasma at. emission spectrometry. The results showed that the deriv. technique not only eliminated the spectral interferences from the matrix, but also reduced the effect of the interferences on the detection limit. The deriv. spectrometry significantly improved the true detection limits. At low analyte concns., the deriv. techniques yielded more reliable quant. results than the traditional off-peak and on-peak correction methods.

%L19 ANSWER 91 OF 169 CA COPYRIGHT 2002 ACS

AN 114:258743 CA

TI Simultaneous determination of copper and cobalt with methylethylenediaminetetraacetic acid using derivative spectrophotometry

AU Castro-Romero, J. M.; Fernandez-Solis, J. M.; Bollain-Rodriguez, Ma. H.; Bermejo-Martinez, F.

CS Dep. Anal. Chem., Univ. Sch. Polytech. Ferrol, Ferrol, 15405, Spain

SO Microchem. J. (1991), 43(2), 104-8

AB The application of deriv. spectrophotometry to the simultaneous detn. of copper(II) and cobalt(II) with methylethylenediaminetetraacetic acid is described. The procedure does not require equations to be solved, and is suitable for concns. of 0.2-8.0 mg mL⁻¹ of cobalt and 0.05-1.60 mg mL⁻¹ of copper. The main interferences, both anionic and cationic, are easily

eliminated.

%L19 ANSWER 100 OF 169 CA COPYRIGHT 2002 ACS

AN 113:178368 CA

TI Simultaneous determination of three components in compound clorprenaline tablets by the derivative-complementary tristimulus method

AU Li, Q. Y.; Zhuo, Z. L.; Chen, Y. W.

CS Shanghai Coll. Chin. Tradit. Med., Shanghai, 200032, Peop. Rep. China

SO Yaoxue Xuebao (1990), 25(5), 357-61

AB Clorprenaline-HCl (I), bromhexine-HCl, and decloxizine-HCl are 3 main components in clorprenaline compd. tablets. The serious overlapping bands of their absorption spectra cause the interference in the detns., esp. the component I which has both minor content and low absorption coeff., thus making the anal. difficult. In this paper, the interference from matrix is eliminated by using first-order deriv. transformation. In combination with complementary tristimulus method and with the technique of addns., the concns. of the 3 components in tablets can be successfully detd. simultaneously by spectrophotometry. A software developed in this lab. makes possible the ease of parameter selection, reporting data in various formats and printing figures of dissoln. process, showing a clear locus. This method will be of value to quality control in manufg. process and to the research of the dissoln. dynamics of tablets in simulated stomach.

~~L19~~ ANSWER 107 OF 169 CA COPYRIGHT 2002 ACS

AN 112:111276 CA

TI Elimination of interferences in spectral data

AU Lacey, Richard F.

CS Hewlett-Packard Lab., Palo Alto, CA, 94303-0971, USA

SO Appl. Spectrosc. (1989), 43(7), 1135-9

AB A general-purpose method for eliminating one or more interferences from spectra in a completely objective way is described. The method, called least-squares subtraction, depends only on the linearity of the spectra and the linear independence of the analyte's spectrum from those of the interferences. The spectrum that results after correction is modified from the spectrum of the pure analyte, but it can still be used for quantitation and identification. Because of this modification, the method is best applied to problems where the presence of the analyte is obscured by the interferences, or when fast, automatic removal of one or more time-varying interferences from a series of spectra is required. The method is illustrated by the removal of a strong interference from the attenuated total reflectance measurement of the IR spectrum of an enzyme-substrate complex and the removal of a changing chromatog. baseline from the output of a liq. chromatograph's diode array detector.

~~L19~~ ANSWER 110 OF 169 CA COPYRIGHT 2002 ACS

AN 110:199284 CA

TI Computerized compensation method for the spectrophotometric determination of a single substance in the presence of interferences

AU Wahbi, Abdel Aziz; Mahgoub, Hoda; Barary, Magda

CS Fac. Pharm., Alexandria Univ., Alexandria, 21521, Egypt

SO Analyst (London) (1989), 114(4), 505-8

AB The difference curves obtained using the compensation method for the spectrophotometric detn. of a single substance in the presence of interferences were computed using a BASIC computer program. The exact balance-point (end-point) was defined on a plotter. When the absorption characteristics of the substance to be detd. disappear, the resulting curve corresponds to the interferences, and the concn. of the substance in the sample soln. is equal to that in the ref. soln. The applicability of the

method was illustrated by the detn. of atropine sulfate in an injection soln. and ephedrine-HCl and nadolol in tablets. The results showed good agreement with those obtained using the exptl. compensation method and a second-deriv. UV spectrophotometric method.

%L19 ANSWER 112 OF 169 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1990:73787 BIOSIS
TI THE APPLICATION OF DERIVATIVE SPECTROPHOTOMETRY FOR THE SIMULTANEOUS DETERMINATION OF COCAINE AND OTHER LOCAL ANESTHETICS PART I. COCAINE LIDOCAINE MIXTURES.
AU ARUFE-MARTINEZ M I; ROMERO-PALANCO J L; GAMERO-LUCAS J; VIZCAYA-ROJAS M A
CS DEP. DE MED. LEGAL AND TOXICOLOGIA, FAC. DE MED., 11003 CADIZ, SPAIN.
SO J ANAL TOXICOL, (1989) 13 (6), 337-341.
AB The early interest in the alkaloid cocaine lay in its local anesthetic properties. However, the drawbacks observed in its clinical use resulted in an intense effort to search for a substitute. Furthermore, cocaine is psychologically if not physically addictive. Dilutents and adulterants of cocaine include sugar, amphetamine, caffeine, and, above all, local anesthetics. According to Brown and Malone approximately 67.5% of 939 alleged cocaine-containing samples was identified as cocaine whereas 22.5% was cocaine plus some local anesthetic. Compounds which have been found to be active as local anesthetics generally have common structural features: an aromatic and an amine portion linked with an intermediate chain. Consequently, they show similar absorption characteristics and thus forbid the application of conventional spectrophotometry to the simultaneous determination of these drugs. Various TLC, GLC (4), and HPLC methods for the analysis of such mixtures have been described. UV-VIS derivative spectrophotometry, which offers enhancement of fine structure, has proved particularly useful in eliminating interferences from spectral overlapping. It is an easy, rapid, and relatively inexpensive technique available in most laboratories. Many applications of derivative spectrophotometry have appeared in the literature. In forensic work, it has been proposed for the analysis of some illicit drugs. We have considered it a tool of great interest for resolving any analytical problem such as the simultaneous determination of cocaine and other anesthetics in binary mixtures, which often arise in the illicit cocaine market. In a previous paper, we reported the advantages of this technique for identifying cocaine in the presence of other local anesthetics such as lidocaine, procaine, benzocaine, or tetracaine which was not possible with conventional UV absorption spectrophotometry. The goal of this study is to report the advantageous application of derivative spectrophotometry to the simultaneous determination of cocaine and lidocaine in binary mixtures. Other cocaine-local anesthetic mixtures are reported in Parts II, III, and IV of this article.

✓ 119 ANSWER 113 OF 169 CA COPYRIGHT 2002 ACS
AN 112:245177 CA
TI Simultaneous determination of metal ions. Spectrophotometric determination of binary, ternary and quaternary mixtures of aluminum, iron, copper, titanium, and nickel by extraction with 8-hydroxyquinoline
AU Blanco, M.; Coello, J.; Gonzalez, F.; Iturriaga, H.; Maspocho, S.
CS Fac. Cienc., Univ. Auton. Barcelona, Bellaterra, E-08193, Spain
SO Anal. Chim. Acta (1989), 226(2), 271-9
AB 8-Hydroxyquinoline was used as a photometric reagent for the simultaneous detn. of binary, ternary and quaternary mixts. of Al, Fe, Cu, Ti and Ni after extg. their complexes in chloroform and resolving the mixed spectrum obtained by means of a previously described multicomponent anal. program based on a least-squares fitting algorithm. The use of first- deriv.

spectra allows better resoln. of the samples and corrects for errors arising from incomplete phase sepn. The av. recoveries from the different mixts. assayed ranged between 99.4% (Ti) and 105.4% (Ni).

L19 ANSWER 117 OF 169 CA COPYRIGHT 2002 ACS
AN 110:68686 CA
TI Spectrophotometric and derivative spectrophotometric study of gallium complexes with 1-(2-pyridylazo)-2-naphthol in aqueous phase
AU Sharma, R. L.; Singh, H. B.
CS Univ. Delhi, India
SO Zh. Anal. Khim. (1988), 43(6), 1037-41
AB Ga traces were detd. by spectrophotometry at 542 or deriv. spectrophotometry at 549 nm of its 1:1 complex with PAN solubilized in NH₄OAc solns. (pH 4.6) by cetyltrimethylammonium bromide. The molar absorptivity, conditional stability const., and Sandell sensitivity are 1.16 .times. 10⁴ L mol⁻¹ cm⁻¹, 2.8 .times. 10¹⁰ L mol⁻¹, and 6.01 ng cm⁻², resp. Beer's law was obeyed for (1-6) .times. 10⁻⁵ mol L⁻¹ Ga solns. The interference of various cations and anions was examd. Deriv. spectrophotometric techniques are indicated for eliminating the interference of V and Zn.

%L19 ANSWER 129 OF 169 CA COPYRIGHT 2002 ACS
AN 110:82576 CA
TI Application of first derivative UV spectrophotometry to the analysis of some corticosteroids
AU El-Yazbi, Fawzy A.; Korany, Mohamed A.; Abdel-Razek, Omayma; El-Sayed, Mahmoud A.
CS Fac. Pharm., Univ. Alexandria, Alexandria, Egypt
SO Alexandria J. Pharm. Sci. (1987), 1(1), 1-4
AB A simple and direct method for the detn. of some corticosteroids, i.e. hydrocortisone, dexamethasone, prednisolone, and prednisone, is presented. The method is based on the use of first deriv. UV spectrophotometry to eliminate the interferences that would originate from secondary ingredients. The method was applied for the detn. of these drugs in com. available dosage forms with a coeff. of variation <2%.

L19 ANSWER 130 OF 169 CA COPYRIGHT 2002 ACS
AN 105:145085 CA
TI Ratios of first-derivative maximums and compensated derivative absorption curves
AU Wahbi, Abdel Aziz M.; Abounassif, Mohammad A.; Al-Kahtani, Hussein M. G.
CS Dep. Pharm. Chem., King Saud Univ., Riyadh, 11451, Saudi Arabia
SO Analyst (London) (1986), 111(7), 777-80
AB General procedures are outlined for the detection of the presence of interferences during spectrophotometric anal. using first-deriv. absorption spectra. These involve ratios of first-deriv. max., which are independent of concn., and the compensated deriv. curves. Thus, selecting two suitable max. at λ_1 and λ_2 , D_{11}/D_{12} , $|D_{11} - D_{12}|/D_{11}$ and D_1 (corr.) $1/|D_{11} - D_{12}|$ are used to reveal the shape of the interference curve and the possibility of eliminating its effect. These ratios are highly reproducible with relative std. deviations of <1%. The methods are illustrated by the detn. of PhOH in a pharmaceutical prepn. The results were in good agreement with those of the official bromometric method.

%L19 ANSWER 144 OF 169 MEDLINE
AN 84137545 MEDLINE
TI Determination of carboxyhemoglobin in the presence of other blood hemoglobin pigments by visible spectrophotometry.

AU Siek T J; Rieders F
SO JOURNAL OF FORENSIC SCIENCES, (1984 Jan) 29 (1) 39-54.
AB The convenience of the spectrophotometric method for the determination of carboxyhemoglobin has been tempered by the observation that the analysis of postmortem bloods is often biased by the presence of pigments other than oxyhemoglobin, carboxyhemoglobin, and reduced hemoglobin. These other pigments include most prominently methemoglobin and sulfhemoglobin. Using a microprocessor-controlled spectrophotometer, a method was developed depending on absorbance difference measurements at isosbestic points for oxyhemoglobin, carboxyhemoglobin, and reduced hemoglobin that is accurate down to 2% carboxyhemoglobin in fresh blood. A correction for the error caused by methemoglobin is part of the method. Qualitative confirmation of carboxyhemoglobin by examination of spectra details, sodium dithionite reduction, and first derivative spectra is described. The analysis of denatured and autolyzed bloods is examined in the context of postmortem case reports. A number of spectra are shown in detail, including methemoglobin, sulfhemoglobin, alkaline hematin, acid hematin, and mixtures of blood pigments containing varying concentrations of carboxyhemoglobin. The method has been shown to be precise, accurate, and reliable for fresh bloods. While accuracy for denatured bloods is diminished, reliability of carboxyhemoglobin identification is maintained. The analysis time is about 5 min for routine blood samples and the method is easily implemented with a precise microprocessor-controlled spectrophotometer.

%L19 ANSWER 149 OF 169 CA COPYRIGHT 2002 ACS

AN 99:93843 CA

TI Studies on the elimination of interfering absorption in spectrophotometric analysis of pharmaceutical preparations. II. Application of first-derivative spectrometry to the determination of hydrochlorothiazide in hypotensive tablets

AU Xu, Jialiang; Yang, Qinghua; Dong, Shanshi; Yu, Rugu

CS Div. Anal. Chem., Nanjing Coll. Pharm., Nanjing, Peop. Rep. China

SO Nanjing Yaoxueyuan Xuebao (1982), 20(3), 9-14

AB The method eliminates interference in the UV spectra and is simple and rapid. Hydrochlorothiazide (I) [58-93-5] was detd. in hypotensive tablets by first-deriv. spectrometry using a recording double beam spectrophotometer with an attachment (UV-300) or a manual spectrophotometer (751G). The mean recoveries of I were 99.51 and 99.14% (at the 95% confidence level), resp.

%L19 ANSWER 150 OF 169 CA COPYRIGHT 2002 ACS

AN 96:118385 CA

TI Derivative spectrophotometry: determination of bilirubin in amniotic fluid

AU Caselli, M.; Traini, A.

CS Ist. Chim. Anal., Univ. Bari, Bari, 70126, Italy

SO Anal. Lett. (1981), 14(B17-18), 1465-81

AB A method is described for detn. of bilirubin in amniotic fluid, based on the use of deriv. spectrophotometry which eliminates interference by Hb. This method presents advantages of accuracy and speed in comparison with the normally used procedures. Bilirubin detn. in amniotic fluid is a test for the evaluation of fetal hemolytic disease. Interference by Hb was studied, and various methods of measurement were considered. Second deriv. and peak-to-peak measurements seem to give the best results.

149 ANSWER 151 OF 169 CA COPYRIGHT 2002 ACS

AN 94:55694 CA

TI Microcomputer fluorometer for corrected, derivative, and differential spectra and quantum yield determinations

AU Ritter, A. W.; Tway, P. C.; Love, L. J. Cline; Ashworth, H. A.
CS Dep. Chem., Seton Hall Univ., South Orange, NJ, 07079, USA
SO Anal. Chem. (1981), 53(2), 280-4
AB The procedures and electronic interface for a microcomputer-controlled spectrofluorometer are described, and its performance was evaluated in various data treatment schemes. It is used to obtain cor. fluorescence spectra which are then integrated for use in calcn. of quantum yields. Corrections are made for the light source emission profile, monochromators/optics transmission characteristics, and photomultiplier wavelength response profile, but possible absorbance by the sample of the excitation and emission radiation is not considered. The instrument is also used to calc. and output deriv. spectra as well as differential spectra to correct for background interferences.

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AN 86:135832 CA

TI Diode array spectrometer for the simultaneous determination of hemoglobins in whole blood

AU Milano, M. J.; Kim, Kwang-Yil

CS Dep. Chem., State Univ. New York, Buffalo, N. Y., USA

SO Anal. Chem. (1977), 49(4), 555-9

AB A solid-state linear diode array spectrometer was applied to the simultaneous detn. of Hbs in whole blood. The use of signal averaging for low noise, deriv. spectra to reduce systematic errors, and least squares calcns. to ext. the max. possible information from the spectra allows the anal. to be performed through fiber optic probes. The probes are inexpensive, easy to construct, and small enough to fit within a hypodermic syringe needle or catheter for the in vivo monitoring. Relative amts. of oxyHb, carboxyHb, and reduced Hb can be detd. in 30s with a precision of .apprx.1%.

=> log y

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